



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:	Docket No.: 36540
KRÍŽIK, Vladislav et al.	Confirmation No.: 6589
Serial No. : 10/554,163	Group Art Unit No.: 3745
Filed: October 21, 2005	
WATER WHEEL MOTOR	Examiner: VERDIER, Christopher M.

---

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

DECLARATION UNDER 37 C.F.R. § 1.132

1. I, Vladislav Krížik, am one of the inventors named in the above-referenced patent application (hereinafter "the Krížik application"). I have graduated from the University of Zilina with a specialization in engineer's technology. My experience includes work as a development constructor, and later a designer of building machines and hydraulic equipment. Beginning in 1990, I have worked in the area of research and development in various technologies, but primarily in the field of hydromechanics and hydrodynamics of natural watercourses, to include development of technical equipment which imitate natural elements of watercourses, marine electricity generation stations for watercourses, mechanical structures for energy generation purposes, and the exhaustion, filtration and transport of sooty coal. As an individual with expertise in the area of water power, I am making this declaration in support of the Krížik

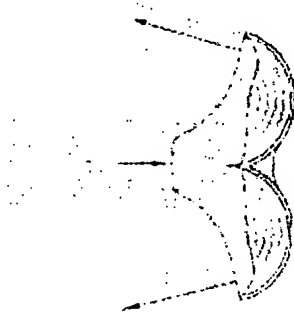
application by explaining the technology and by attesting to the criticality of the differences between the claimed invention and the prior art.

2. My understanding of the English language is limited, so a person who is fluent in both English and Slovak (my native language) translated this Declaration for me.

3. I understand that the Examiner has rejected the claims of the above-referenced application as being anticipated by either U.S. Patent No. 1, 579,146 to Richardson (hereinafter "the '146 patent"), or U.S. Patent No. 4,950,130 to Erlach (hereinafter "the '130 patent"). The first point of distinction between the invention of the Krížik application and the teachings of the '146 and '130 patents is that these patents are concerned with water turbines, whereas the claims of the Krížik application recite the presence of a water wheel. Those having ordinary skill in the art recognize these to be two different pieces of equipment. A water turbine transforms the kinetic water energy to mechanical energy of the rotor. This occurs inside the housing of the turbine by changing the direction of the water flow by a combination of the turbine paddles or vanes and the housing of the turbine. **The housing of the water turbine is an essential part of the turbine structure in order to reach the required operational parameters.** Water turbines are intended for large water heads and high rotational speeds. Water wheels, on the other hand, do not use this effect. Rather, water wheels by their nature are designed for use with relatively small water heads, are low-speed, and do not require a housing to enclose the area

where they rotate. The paddles of a water wheel are immersed into flowing water, by which flow of water against the paddles the energy is transferred to the paddles and the wheel. It has generally been understood by those skilled in the art that water wheels cannot be effectively provided with isobaric paddles as may be used in a Pelton turbine, because a water wheel is designed for low-speed operation and does not have a housing. As a result, water turbines were required in order to generate larger quantities of energy when compared to a water wheel of the same size. While generating more energy than water wheels, water turbines are more costly and require additional equipment to support their operation. The significance of the water wheel's use in the present invention is explained in more detail below.

4. Another important distinction between the invention of the Krížik application and the teachings of the '146 and '130 patents is that the present claims recite that the paddles on the water wheel are isobaric. Neither of the cited patents teaches or suggests the use of isobaric paddles. One having ordinary skill in the art understands that an isobaric paddle is configured in such a way that water flows onto the paddle only from one side of the paddle surface and that the shape of the paddle changes the direction of its speed vector in a direction as close as possible to 180° from the original water flow direction. The figure below illustrates the manner by which an isobaric paddle changes the direction of water flow.

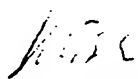


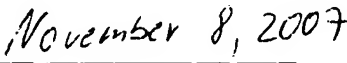
5. The use of isobaric paddles on the water wheel is a critical feature of the present invention, and it yields an unexpected result. That is, isobaric paddles allow for efficient generation of energy by a water wheel, not by a turbine, and this had not been achieved prior to the present invention. Accomplishing this without the use of a water turbine is significant, and all of the extra equipment and expense associated with a water turbine is avoided.

6. As a benefit to the understanding of the characteristics and operation of the present invention by the Examiner, attached hereto as Exhibit A please find a photograph showing a water wheel in accordance with the present invention. This water wheel includes paddles having isobaric characteristics as shown in the illustration above. Further, the present invention has gained recognition in Slovakia and is in actual use. As it may benefit the understanding of the Examiner as to the benefits realized by the present invention employing the isobaric paddles, attached as Exhibit B please find a CD which includes a segment of a

television news program featuring the present invention. I am one of the persons appearing therein and was interviewed in connection with the news segment. The broadcast of this news segment is significant in demonstrating the uniqueness of the present design for the water wheel and its applicability in connection with power generation.

7. I further declare that all statements made herein of my own knowledge are true and that statements made herein on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this Declaration is directed.

  
\_\_\_\_\_  
Vladislav Krížik

  
\_\_\_\_\_  
Date